

CLAIMS

1. A ferrite material comprising a sintered body comprising as main constituents, 62 to 68 mol% of  $\text{Fe}_2\text{O}_3$ , 12 to 20 mol% of ZnO, 0.2 to 5 mol% of NiO, and the balance being substantially MnO; and

the saturation magnetic flux density thereof at 100°C is 450 mT or more (magnetic field for measurement: 1194 A/m), and the minimum core loss value thereof is 1200 kW/m<sup>3</sup> or less (measurement conditions: 100 kHz, 200 mT).

2. A ferrite material comprising a sintered body comprising, as main constituents, 62 to 68 mol% of  $\text{Fe}_2\text{O}_3$ , 12 to 20 mol% of ZnO, less than 4 mol% (not inclusive of 0) of  $\text{LiO}_{0.5}$ , and the balance being substantially MnO.

3. The ferrite material according to claim 2, wherein:  
the content of  $\text{LiO}_{0.5}$  in said sintered body is from 0.2 to 3 mol%.

4. A ferrite material comprising a sintered body comprising, as main constituents, 62 to 68 mol% of  $\text{Fe}_2\text{O}_3$ , 12 to 20 mol% of ZnO, 5 mol% or less (not inclusive of 0) of NiO, less than 4 mol% (not inclusive of 0) of  $\text{LiO}_{0.5}$ , and the balance being substantially MnO.

5. The ferrite material according to any one of claims 1 to 4, wherein:

said ferrite material comprises, as first additives, 250 ppm or less (not inclusive of 0) of Si in terms of  $\text{SiO}_2$  and 2500 ppm or less (not inclusive of 0) of Ca in terms of  $\text{CaCO}_3$ .

6. A ferrite material comprising a sintered body comprising as main constituents, 62 to 68 mol% of  $\text{Fe}_2\text{O}_3$ , 12 to 23 mol% of  $\text{ZnO}$ , and the balance being substantially  $\text{MnO}$ ; and as first additives, 80 to 250 ppm of Si in terms of  $\text{SiO}_2$  and 800 to 2500 ppm of Ca in terms of  $\text{CaCO}_3$ ; wherein:

the saturation magnetic flux density thereof at  $100^\circ\text{C}$  is 450 mT or more (magnetic field for measurement: 1194 A/m) and the minimum core loss value thereof is  $1200 \text{ kW/m}^3$  or less (measurement conditions: 100 kHz, 200 mT).

7. The ferrite material according to claim 5 or 6, wherein:

the weight ratio between said content of  $\text{SiO}_2$  and said content of  $\text{CaCO}_3$  ( $\text{SiO}_2$  content/ $\text{CaCO}_3$  content) is 0.04 to 0.25.

8. The ferrite material according to any one of claims 1, 2, 4 and 6, wherein:

said ferrite material comprises, as second additives, one or more selected from the group consisting of  $\text{Nb}_2\text{O}_5$ : 400 ppm or less (not inclusive of 0),  $\text{ZrO}_2$ : 1000 ppm or less (not inclusive of 0),  $\text{Ta}_2\text{O}_5$ : 1000 ppm or less (not inclusive of 0),  $\text{In}_2\text{O}_5$ : 1000 ppm or less (not inclusive of 0), and  $\text{Ga}_2\text{O}_5$ : 1000 ppm or less (not inclusive of 0).

9. The ferrite material according to any one of claims 1, 2, 4 and 6, wherein:

said ferrite material comprises, as third additives, one or both of  $\text{SnO}_2$ : 10000 ppm or less (not inclusive of 0) and  $\text{TiO}_2$ : 10000 ppm or less (not inclusive of 0).

10. The ferrite material according to any one of claims 1, 2, 4 and 6, wherein:

said ferrite material comprises, as fourth additives, one or more selected from the group consisting of a P compound: 35 ppm or less (not inclusive of 0) in terms of P,  $\text{MoO}_3$ : 1000 ppm or less (not inclusive of 0),  $\text{V}_2\text{O}_5$ : 1000 ppm or less (not inclusive of 0),  $\text{GeO}_2$ : 1000 ppm or less (not inclusive of 0),  $\text{Bi}_2\text{O}_3$ : 1000 ppm or less (not inclusive of 0), and  $\text{Sb}_2\text{O}_3$ : 3000 ppm or less (not inclusive of 0).

11. The ferrite material according to any one of claims 1, 2, 4 and 6, wherein:

the bottom temperature at which the core loss thereof exhibits the minimum value falls within a range between 60 and 130°C.

12. The ferrite material according to any one of claims 1, 2, 4 and 6, wherein:

the saturation magnetic flux density thereof at 100°C is 480 mT or more (magnetic field for measurement: 1194 A/m).

13. The ferrite material according to claim 12, wherein:  
the initial permeability thereof at room temperature is  
700 or more.

14. The ferrite material according to any one of claims 1,  
2, 4 and 6, wherein:  
said sintered body has a relative density of 93% or more  
and a mean grain size of 5 to 30  $\mu\text{m}$ .

15. The ferrite material according to any one of claims 1,  
2, 4 and 6, wherein:  
the saturation magnetic flux density thereof at 100°C  
is 480 mT or more (magnetic field for measurement: 1194 A/m)  
and the minimum core loss value thereof is 1100 kW/m<sup>3</sup> or less  
(measurement conditions: 100 kHz, 200 mT).

16. The ferrite material according to any one of claims 1,  
2, 4 and 6, wherein:  
the saturation magnetic flux density thereof at 100°C  
is 500 mT or more (magnetic field for measurement: 1194 A/m),  
the minimum core loss value thereof is 1000 kW/m<sup>3</sup> or less  
(measurement conditions: 100 kHz, 200 mT), the bottom  
temperature at which the core loss thereof exhibits the minimum  
value is from 80 to 120°C, and the initial permeability thereof  
at room temperature is 800 or more.